



## THERE'S A REVOLUTION IN PRECISION PARTS DRYING

### The NEW Sonic Rotary Air Knife Stops False Readings

**Company:**

Marshall Gas Controls, San Marco, TX

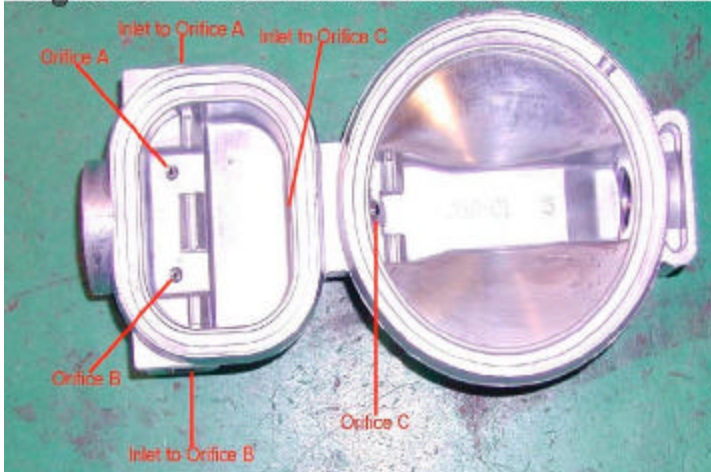
**Background:**

The Marshall Gas Controls div of S.H. Leggitt Company is one of the U.S.' premier manufactures of L.P. gas regulators for the recreational vehicle and gas barbeque industries. Their latest generation of patented regulators boasts improved efficiencies and BTU ratings over previous designs, resulting from a much more sophisticated housing design. Precision porting of the new die cast housing together with the high pressure leak detection system used to do the final check of the completed regulator assembly has made drying the finished casting more critical than ever.

**Problem:**

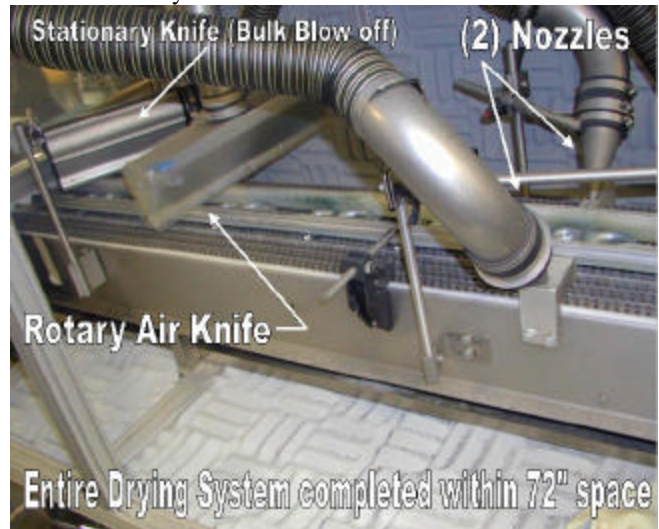
Following the batch cleaning process, several line operators would remove the parts from the baskets and manually blow the parts dry with high pressure compressed air blow-off guns. Aside from the labor costs, compressed air costs and high noise levels for the operators, Marshall was not achieving the zero false leak readings they needed to have. Any visible moisture left in the fuel ports, **the smallest of which is .006-inch diameter**, could result in a false low gas flow rate which was actually water in the ports. A secondary concern was that any surface abrasions on the gasket areas of the machined casting, occasionally caused by excessive operator handling, would produce real failures during the regulator's pressure check.

**Regulator - Bottom view of orifices to be dried**



**The Sonic "Engineered" Solution:**

Marshall manufacturing engineer, Thania Ramirez, began exploring several methods that she thought could automate the manual blow-off step and then contacted vendors to offer their solutions. A factory floor space of 4' wide x 12' long was allocated to the drying stage. Several drying options were narrowed down to two methods that each manufacturer guaranteed would give Marshall a dry casting every time. Sonic Air Systems of Brea, CA was chosen after they were able to convince Marshall that a Sonic blower & revolving "Rotary" Sonic air knife (patent pending) would do the job in less than 1/2 the space, 1/2 the equipment cost and 1/2 the operating cost of the infra-red heater tunnel which Marshall was also considering. Another factor in Sonic's favor was that, unlike the heater tunnel, the Rotary air knife only raised the part temperature by a few degrees versus 60-70F. There would be no issues with operator assembly of the regulators immediately after drying. In fact, because Sonic was so much more advantageous than the I.R. system, Marshall decided to invest some of their savings in having their production engineer, Thad LaRoux, fly to Sonic's Southern California factory to witness full scale tests to verify the Sonic Rotary Air Knife's effectiveness.



Marshall, with Sonic's engineering help, also purchased a complete conveyor system, air/mist exhaust unit and built the air knife enclosure per Sonic recommendations. The completed Sonic Blower and Rotary Air Knife System, including the conveyor, measures only 3' wide x 6' long. According to Mr. LaRoux, "Sonic, and their Texas representative Jackson & Associates, provided a level of support during this project which few equipment suppliers ever do." He added, "that being the most important piece of this new system, **I'm glad Sonic did everything they said they would when I needed them to do it.**"